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NEW APTEROUS ARADIDAE (HEMIPTERA)

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The present paper comprises the descriptions of one new genus and seven new species of apterous aradids. The types have been deposited as stated under the description of the various new species. In the measurements, 80 units equal one millimeter.

Acaricoris floridus, new sp.

Small, obovate, dark reddish ferrugineous, slightly shiny, without lateral lobes or projections on thorax or abdomen, widest behind middle of pronotum. Length (male), 3.00 mm., and (female) 3.15; width, (male) 1.12 mm. and (female) 1.52 mm.

Head 0.52 mm. long and 0.52 mm. wide across eyes, subquadrate, with low and narrow longitudinal ridges; juga narrow, flattened laterally, slightly surpassing tylus in the form of short, rounded, divergent, finger-like processes with rounded apices; tylus wide, with a median longitudinal row of tiny tubercles; each lateral shelf on practically same level and nearly as wide as median part of head on vertex, longitudinally ridged, moderately narrowed to neck back of eyes, with a small tubercle on lateral side behind each eye; eyes small, reddish; labial sulcus very wide, shallow, extending to neck; labium short, reaching to end of sulcus. Neck short, constricted. Antenniferous tubercles stout, divergent, narrowed apically, each with a blunt apex. Antennae 0.84 mm. long, with pale inconspicuous pubescence, rather short, with first segment stout, granulate, measurements—I, 0.26 mm.; II 0.15 mm.; III, 0.20 mm.; IV, 0.23 mm. Legs short, finely granulate.

Spiracles II, III and IV sublateral, scarcely visible from above unless connexiva are slightly turned up or abdomen a little tilted upward on one side; V, VI and VII lateral and thus visible dorsally or ventrally; VIII placed on end of a short, posteriorly-directed tubercle. Thoracic divisions and first two abdominal tergites all fused together in one piece, with transverse suture in front of and behind mesonotum (save on median ridge) distinctly indicated; median longitudinal ridge becoming wider posteriorly, with two to three small, longitudinal ridges up on median ridge, all ridges with smooth and shining surfaces; surface on each side of median ridge with small raised areas and longitudinal ridges. Abdomen with tergites III to VI (inclusive) fused together into one solid piece; connexival segments, also segmentation of body

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beneath, as in other members of the genus. Collar very short, narrow, exerted.

Holotype (male) and *allotype* (female), Highlands Hammock Park, Highlands County, Fla., taken from forest litter on the ground by means of a Berlese funnel, June 15, 1955, by H. S. Dybas, in Chicago Museum of Natural History. *Paratypes*, 4 adults (and numerous nymphs of various sizes) same data as type.

Differs from *A. austeris* Drake of Guadeloupe by not having a small lateral projection on each side of abdominal tergite VII and more pronounced median longitudinal ridge of thorax. *A. ignotus* Harris and Drake of the Gulf states has a lower and more rugulose median longitudinal ridge, wider anterior part of thorax and the dorsal abdominal gland of the fused tergites is black.

Eretmocoris insularis, new sp.

Small, obovate, slightly shiny, without lateral lobes or projections. widest behind middle of abdomen. Stigmata II, III and IV ventral, latter very near exterior margin, each of the other two slightly farther removed anteriorly; IV to VII (inclusive) lateral, visible from above, VIII (genital) placed on apical end of small posteriorly-directed process. Length, 3.80 mm.; width, 2.12 mm.

Head subquadrate, width across eyes (0.75 mm.) and median length subequal, rugulose, each lateral shelf a little narrower on vertex than median longitudinal part; eyes scarcely inserted at base, small, with a fairly prominent tubercle (extending laterally to middle of eye) just back of each eye, then with lateral shelf quickly narrowed to neck and granulate on surface of lateral side; neck narrow, short; juga surpassing apex of tylus, there stout, divergent, rounded with blunt apex, the tylus roundly declivent anteriorly; antenniferous tubercles large, divergent, narrowed to a blunt point. Labial sulcus deep, very wide, narrowed apically, the labium testaceous and extending to apex of sulcus. Antennae finely granulate, 1.15 mm. long, with basal segment stout and exceeding apices of juga by nearly half of its length, measurements—I, 25; II, 17; III, 28; IV, 22.

Thorax and abdominal segments I and II all fused together, with sutures in front of and behind mesonotum plainly indicated, with wide median part polished; median longitudinal ridge glossy, widened posteriorly, arising just behind pronotum, with two interrupted, rounded, testaceous ridges (one on each side of dorsal surface: interruptions indicating divisions of metanotum and abdominal tergites I and II); pronotum with median longitudinal furrow, with lateral sides concavely narrowed anteriorly and then anterolateral angles produced bluntly forward; anterior margin deeply widely excavated for reception of collar; collar short, smooth, wide, encircled by a deep furrow; mesonotum wider but not longer than pronotum back of collar, the lateral margins of all thoracic divisions granulate. Abdominal tergites III to VI (inclusive) united into a solid plate, sculptured, with the large dorsal gland blackish fuscous; ventral tergites IV and VII separated by usual sutures, the basal segments fused with sterna. Connexival segments marked off as in other members of the genus.

Type (male), Guadeloupe (Three Rivers), in Drake Collection (U.S.N.M.)

Separated from its congeners by the larger tubercle behind each eye, slightly longer antennae, thicker juga, absence of lateral lobes on abdominal segment VII and especially by the broken pair of carinae (one on each side of dorsal surface) up on top of large median ridge. The interruption of these carinae probably indicate the original divisions between metanotum and tergite I as well as between tergites I and II.

Tananarivea, new gen.

Large, thick, obovate, without lateral lobes or projections, with areas or linear markings of tomentose hairs. Head wide, thick, only slightly narrowed behind eyes, with neck short and little constricted; juga only slightly surpassing tylus; eyes small, exerted; lateral shelves thick, poorly defined. Labial sulcus rather long, wide, open behind; labium slightly longer than sulcus, not reaching to anterior margin of pronotum. Antennae moderately long, finely granulate; segment I swollen, not surpassing apex of juga, II shortest, III longer than IV. Legs short, slightly roughened.

Thorax and abdominal tergites raised, pro- and metanotum rather craggy, the abdominal scent gland prominent. Pronotum sloping downward anteriorly, not excavated for reception of short collar; mesonotum set off from both pro- and metanotum by usual transverse furrows; metanotum fused with first two abdominal tergites; abdominal tergites III to VI (inclusive) fused into one solid plate; connexival segments I and II fused, the others separated from one another by usual sutures. Abdomen beneath with segments IV, V and VI distinguishable by the usual sutures. Spiracles II to VI (inclusive) ventral, remotely removed from outer edge of segments; VII placed only slightly beneath the upper edge of the connexiva, scarcely visible from above; VIII placed on the posterior edge of the genital segment.

The color, thickness of body and general aspect are similar to the genus *Emydocoris* Usinger from South America. However, the thick head, much smaller eyes, much wider neck, poorly defined, thick, lateral shelves, and the position of spiracle VII readily separate the two genera. It should also be noted that the orificial canal and opening are rather similar in both genera, also the position of stigmata except VII.

The type species is

Tananarivea tiptoni, new sp.

Large, thick, broadly obovate, widest behind middle of abdomen, black with matted tomentose hairs sordid brown. Length, 10.00 mm.; width, 5.00 mm.

Head wide, thick, pretty much covered with matted tomentose hairs, moderately convex longitudinally, with longitudinal furrows on median part, slowly narrowed behind eyes, there with a rounded tubercle just behind each eye, width across eyes and median length subequal (2.10 mm.); eyes small, exerted; juga slightly exceeding tylus, bifid in front; tylus with dorsal surface on higher level than that of juga, longitudinally convex; vertex with each lateral shelf about half as wide as median longitudinal part, the shelves thick and not thin as in *Emydocoris* Usinger; neck very short, thick, very little constricted. Labium fairly long, extending slightly beyond apex of sulcus but not reaching to front margin of prosternum. Antennae moderately long, setose, with segment

I swollen and scarcely reaching to tips of juga, measurements—I, 70; II, 46; III, 60; IV, 50.

Thorax above inflated, with sides slowly rounded to collar; pronotum raised posteriorly, narrower in front than vertex, impressed and excavated at middle behind, more than twice as long as mesonotum; mesonotum narrow, impressed and ridged at middle, with narrow sutures separating it from pro- and metanotum; metanotum and first two abdominal tergites completely fused, inflated, with the front pair of protuberances more widely separated than posterior pair. Abdominal tergites III to VI (inclusive) completely fused, smooth, inflated, with impressed areas but without raised ridges, not sculptured, with dorsal scent gland raised and prominent. Connexival segment I and II fused, the others separated by the usual sutures. Sterna fused, without impression or ridges. Abdominal ventrites I, II and III fused together with metasternum, the rest separated by transverse sutures.

Type (female), Andrambovato, Madagascar, Jan. 8, 1952, collected by Capt. V. J. Tipton, U.S. National Museum. The species is named in honor of the collector. The rostrum is 1.25 mm. long in *tiptoni* and only 0.80 mm. long in *E. testudinatus* Usinger.

***Aglaocoris vicinus*, sp. new**

Large, broad, subquadrate, widest just back of the middle of abdomen. Length 6.25 mm. (male) and 6.70 mm. (female); width, 3.30 mm. (male) and 4.00 mm. (female).

Head rugulose, with longitudinal carinae, slightly wider across eyes (1.50 mm.) than median length (1.35 mm.), without tubercle or protuberance just back of each eye, strongly narrowed behind eyes to neck; eyes moderately large, each placed on outer end of a short, thick stalk; lateral shelves on practically same horizontal level as median, longitudinal part of head, width of latter on vertex nearly same as that of one shelf; antenniferous tubercles large, subconical, divergent; tylus fairly wide, tumid subapically; juga thin, with dorsal edge on lower level than that of tylus, surpassing tylus, there short, subcylindrical and divergent; neck short, rounded. Labial sulcus broad, fairly deep, barely reaching to neck; labium testaceous, just reaching to end of sulcus. Antennae finely granulate, 2.50 mm. long; segment I stout, feebly bent, exceeding juga by two-thirds of its length; IV subclavate, beset with pale hairs on apex; measurements—I, 56; II, 32; III, 4; IV, 35.

Thorax densely, deeply, rugulose pitted; collar short, not inserted, with the transverse furrow just in front of anterior margin of pronotum; median longitudinal ridge widened posteriorly, with dorsal surface rugulose and similarly sculptured as rest of thoracic surface, arising at base of pronotum and then extending posteriorly on second abdominal tergite; pronotum distinctly narrower than mesonotum, with outer edge on each side bifid, slightly projecting in front at anterolateral angles, more than three times as wide as median length; mesonotum wider and slightly longer than pronotum, fused with pro- and mesonotum separating sutures plainly indicated; mesonotum fused also with first three abdominal tergites. Orificial canal nearly upright, sinuate. Abdomen with dorsal tergites III, IV, V and VI fused into one solid plate, sculptured with the usual narrow ridges and impressions; connexival segment I and II fused, others distinctly differentiated from one another and also from

dorsal tergites. Body beneath with all sterna and first three ventrites fused together, other ventrites distinguishable from one another by transverse furrows.

Spiracles II, III and IV ventral, each progressively anteriorly slightly farther removed from outer edge of connexiva; V subventral, VI, VII and VIII lateral, plainly visible from dorsal aspect, VIII (genital) situated on apical end of small, rounded, posterior process. Legs rather short, with tibiae tending to be rather pale. Male ventrite VII beneath (one on each side) with a fairly large, smooth, rounded, bottle-like, process with constricted neck and directed downward. This process is found only in the male and is present in the two species described herein as well as in the three other known species in the genus. As the processes vary in size and shape in different species, the structures are of generic and specific importance in identification.

Type (male), *allotype* (female) and 1 *paratype*, Guadeloupe, W. I., Drake Collection (U.S.N.M.).

Separated from its congeners by antennal measurements, lack of tubercle on lateral side back of each eye, lateral projection of pro- and mesonotum and the very large process on the inferior side of ventrite VII (one on each side) which is pointed almost directly downward.

***Aglaoocoris clarkel*, new sp.**

Large, rectangular, body very little narrowed anteriorly, reddish ferruginous, with rather small lobes on sides of pro- and mesonotum and very small lobes on abdominal tergites V, VI and VII. Head, antennae and legs with numerous, long, pale, stiff, setalike hairs; eyes small, prominently stalked. Spiracles II, III and IV ventral, not visible from above, each anteriorly farther removed from outer edge of segment; V, VI and lateral and VIII (genital) placed on apical end of small projection, all visible dorsally. Length, 6.50 mm.; width, 3.00 mm.

Head subtriangular, shining, nearly smooth, with little sculpturing in the form of ridges. Width across eyes (1.40 mm.) and median length subequal; juga narrow, slightly surpassing tylus in the form of divergent, fingerlike projections; tylus rather narrow, blunt at apex, longitudinally convex, higher than juga; eyes small, placed on outer end of moderately long, slender, rounded stalks; median longitudinal part of head scarcely more elevated than and as wide as a shelf (not including eye-stalks); neck narrow, smooth, with a small tubercle back of each eye. Labial sulcus very wide, deep, barely reaching to neck; labium barely attaining apex of sulcus. Antennae 2.02 mm. long; segment I stout, extending about one-half its length beyond apices of juga; measurements—I, 60; II, 30; III, 34; IV, 28. Antenniferous tubercles stout, divergent, terminating in a fingerlike projection.

Thorax with divisions and first two abdominal tergites all fused together, rather finely closely sculptured, with broad median ridge extending from base of pronotum to fused tergites, with sutures in front of and behind metasternum plainly visible, width across pronotal lobes 2.00 mm. Abdominal tergites III to VI (inclusive) fused into a single plate, sculptured, with dorsal scent gland present, concolorous with tergites. Connexival segments and segmentation on underside of body as in other members of the genus.

Type (female), Fresh Water Lake, Dominica, B. W. I., March 26,

1956, J. F. G. Clarke, U.S. National Museum. Named in honor of Dr. Clarke, who has netted a large number of rare and interesting insects in many areas of the world.

Aglaocoris invisus, new sp.

Large, wide, rectangular, dark ferruginous. Length 5.40 mm. (male) and 5.75 mm. (female); width 2.76 mm. (male) and 3.15 mm. (female).

Head 1.25 mm. wide across eyes, median length subequal to width across eyes, moderately rugulose; juga thin, feebly surpassing tylus, bluntly rounded in front; tylus more elevated than juga, with a small rounded tubercle up on top of subapical elevation; antenniferous tubercles large, subconical, divergent; eyes rather small, placed on outer end of rather small, rounded stalks; lateral shelves (not including eye-stalks) about as wide as and on a slightly lower level than median longitudinal part of head, transversely rugulose, with a very low tubercle on each lateral side behind eye-stalk, rapidly narrowed behind eyes to neck; neck with a small tubercle on each lateral side, narrow, rounded. Labial sulcus rather deep, wide, barely extending to neck; labium extending to end of sulcus. Antennae 1.70 mm. long, finely granulate; segment I moderately incrassate, feebly bent; IV subclavate, with tip hairy; measurements—I, 52; II, 22; III, 31; IV, 30.

Thorax above closely finely rugulose, the median ridge low, broad and widened posteriorly; metanotum without indication of sutures between it and fused abdominal tergites; pronotum distinctly narrower than mesonotum, more than three times as wide at base as median length, with outer margin slightly rounded, slightly produced anteriorly at anterolateral angles; mesonotum fused with pro- and metanotum but with separating suture plainly indicated, with outer margins moderately lobately produced. Abdomen with dorsal tergites III, IV, V and VI fused into one solid plate, with the usual sculptured areas. Body beneath with sterna and first three ventrites fused, the rest of the ventrites with transverse sutures present. Dorsal connexival segments I and II fused together, the rest of the segments clearly distinguished. Spiracles II, III and IV ventral, each progressively anteriorly farther removed from outer edge of connexiva; V submarginal (ventral); VI, VII and VIII marginal, visible from above, the latter situated on apical end of a small, fingerlike, posteriorly-directed projection. Male ventral processes (one on each side of ventrite VII) rather small, directed almost posteriorly, with apex subglobose, without bottlelike neck.

Type (male) and *allotype* (female), Guadeloupe Island, West Indies. *Paratype*: 1 female, same data as type; Drake Collection (U.S.N.M.).

Allied to *A. vicinus*, n. sp. but readily separated from it by its slightly smaller size, measurements of antennal segments, rounded outer margins of pronotum. The male processes on the underside of abdominal tergite VII are also very much smaller, without constricted neck and pointed almost directly posteriorly.